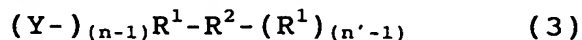


ABSTRACT OF THE DISCLOSURE

There are disclosed a method for producing a cross-coupling compound of formula (3):



5 wherein R^1 represents

a substituted or unsubstituted, linear, branched, or cyclic hydrocarbon group, and

n and n' each represent 1 or 2,

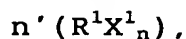
provided that when n and n' are the same, both n and
10 n' are not 2,

R^2 represents a substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl or substituted or unsubstituted alkenyl group,

and

15 Y represents R^2 or X^1 , wherein R^2 is as defined above, and X^1 represents a chlorine, bromine or iodine atom,

which method comprises reacting
an organic halide of formula (1):



20 wherein R^1 is as defined above and carbon atoms at the α and β positions relative to X^1 are sp^3 carbon atoms, and X^1 , n and n' are as defined above,

with a boron compound of formula (2):

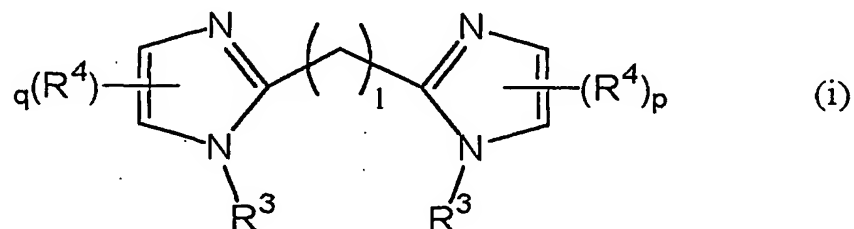


25 wherein R^2 and n' are as defined above,

X^2 independently represents a hydroxyl group or an alkoxy or aryloxy group, or X^2_2 together form an alkoxy or aryloxy group, and m represents 1 or 2, and

m≤n, and the boron atom is bonded with a sp² carbon atom of R² group, or a boronic acid trimer anhydride thereof,

in the presence of a base and a catalyst comprising a
 5 nickel compound and a compound of formula (i):



wherein R³ represents a substituted or unsubstituted alkyl group,

R⁴ represents a hydrogen atom or an substituted or
 10 unsubstituted alkyl group,

l represents an integer of 1 to 3, and

p and q each represents an integer of 0 to 2; and a catalyst.